

Product & Service Datasheet

Offshore Wind Farm High Voltage Subsea Export Cable Repair Joint (to 170kV)



For the offshore repair of high voltage OWF subsea export cables damaged during installation or operation Power CSL offers its robust and reliable repair joint product.

Applications

- Repair of offshore windfarm high voltage export cables (to 170kV)
- Repair of island link high voltage cables (to 170kV)



The joint which has been designed for rapid installation utilises cold-shrink insulation reinstatement technology and has been subject to rigorous testing to IEC 60840 specification and CIGRE 490 and TB623 recommendations (mechanical / electrical / hyperbaric RWP).

The design is modular in nature allowing jointing of different cable designs and sizes. From an Operations & Maintenance perspective one range taking repair joint can be configured to cover the full range of an OFTO's or TSO's export cable assets. This allows a centralised pool of repair joints to be held (rather than multiple bespoke repair joints for each export cable), and when required enables spare export cable from one OWF to be used for repair on another OWF export cable.

Power CSL has supplied range taking joints to OFTOs and marine contractors providing cable repair framework services to OFTOs and TSOs. The repair joint has been used successfully on challenging export cable repairs in UK waters.

Power CSL offers product familiarisation courses for its HV export cable repair joint to suitably experienced technicians. This approach facilitates a wider pool of available offshore personnel.

The joint utilises high strength compression conductor connections. The insulation system is comprised of a one piece cold-shrink moulding with internal stress control features, developed by 3M, and selected and refined by Power CSL for subsea application following close technical collaboration. All joint bodies are electrically tested (HV & PD) as a standard routine QC measure. The combination of joint body 100% electrical test, single-piece construction, and cold-shrink down application removes the potential for installer error that may arise from multi-component moulding or tape based insulation reinstatement systems. The joint bodies are housed within individual resin filled pressure resistant metallic canisters which are sealed to the extruded core lead sheath on each side of the phase joint.

The joint includes stainless steel optical fibre splice enclosure(s) which are highly configurable to accommodate the different optical cable designs found within export cables.

All internal components are housed within a free flooding corrosion resistant overall steel casing fitted with anodes. The product utilises high tensile strength armour terminations.

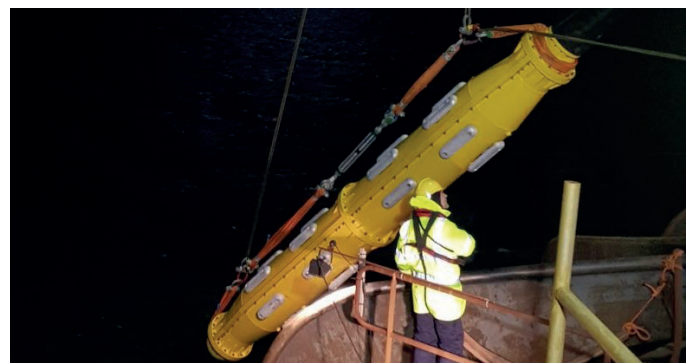
The repair joint can be supplied with bend stiffeners or bend restrictors to suit installation requirements.

Power CSL has optimised all elements of the repair joint assembly operation and the product is therefore rapid to install, with assembly time in the order of 60-72 hours, thereby reducing weather window waiting time and repair vessel time on station.

Key features of the Power CSL subsea OWF high voltage export cable repair joint:

- Voltage up to 170kV
- Type tested to IEC 60840 and CIGRE recommendations
- 300mm² to 1800mm² conductor size range in copper or aluminium
- Range taking 300mm² to 630mm², 630mm² to 1200mm² & 1000mm² to 1800mm² (all subject to cable design review)
- Accommodates XLPE or EPR based cable insulation systems - employs proven one piece cold-shrink joint body technology
- Phase joints housed within resin filled pressure resistant metallic canisters
- Highly effective seals protect against radial ingress of water into the phase joints (75 metre water depth)
- Accommodates all optical fibre design types including appropriate electrical bonding / earthing connections
- Free flooding joint casing coated to Norsok standard with anodes for cathodic protection
- Bend stiffener and bend restrictor options
- Rapid install – typically 60 to 72 hours
- Joint kit provided with assembly frame
- No special tools required

The HV OWF export cable repair joint forms part of the wider range of subsea cable accessories available from Power CSL. This includes repair joints for inter-island connections and oil and gas composite subsea cable types, MV & HV OWF array cable repair joints, EHV repair joints for OWF export cables, pulling heads and hang-offs for all cable types, and bespoke accessories to fulfil special project requirements.



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